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ABSTRACT

This paper discusses what is wrong with the conventional model of teacher education that is stimulating calls for reform and questions whether there is a better way. The paper is organized into three sections. The first examines the relationship between conceptions of teaching and views about learning to teach. The second section identifies the problems that exist in a conventional teacher education model, and the third section proposes a way of thinking based on four interrelated dimensions that will lead to a more connected way of designing teacher education programs. These are: (1) conceptual links across the university-based curriculum; (2) theory-practice links between university and schools; (3) social-cultural links between participants in the program; and (4) personal links in establishing the identity of a teacher educator. (Contains 31 references.) (SLD)

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The Complexity of Learning to Teach: A Four Dimensional Approach to Designing Teacher Education Programs

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Deliberation about worthwhile goals and appropriate means must be an ongoing activity in the teacher education community. These deliberations would be aided by a conceptual framework that identifies central tasks of teacher preparation, those core activities that logically and practically belong to the preservice phase of learning to teach.

(Feiman-Nemser, S., *Handbook of Research on Teacher Education*, 1992, p. 227)

As we begin the 21st century, there is one view that most teachers, teacher educators, preservice students, administrators and policy makers share —there has to be a better way of educating preservice teachers! And this argument comes from several different perspectives. Many teachers brand teacher education as “irrelevant” or “worthless” (Lyndaker, 1990), teacher educators view teaching in schools as “bad practice” (Goodlad, 1993) and student teachers call their teacher education “inadequate” (Wideen, Mayer-Smith, & Moon, 1998). On a broader political scale, the dissatisfaction with teacher education is widespread. In the USA, two movements promote educational reform, but have opposing views about how to do it (Cochran-Smith & Kries, 2001). One movement aims to *professionalize* teacher education by establishing a knowledge base and link this to standards of teaching to get more consistency in how they are trained (Education, 1999; Future, 1996). Another movement aims to *deregulate* teacher education by opening the market for any institution to train teachers and leave it to schools to determine quality (Foundation, 2001; Foundation, 1999a, 1999b). The consequence of this deregulation would be less training for teachers and the loss of statewide quality control.

A recent review into teacher education in Australia criticized the conventional teacher education model and recommended that universities should integrate their subjects and have more relevance to schools:

It is possible to reorganise the knowledge bases of undergraduate teacher education subjects so that they are more integrated with school and classroom culture, and therefore more relevant, more meaningful, better appreciated by student teachers, with less duplication across subject areas.

(Ramsey, 2000, p. 57)

Currently, several state governments in Australia are establishing their own teacher registration boards in an attempt to establish and monitor professional standards. In the UK, a government response to problems in teacher education at the beginning of the 1990s was to mandate school-based teacher education with the provision of 25% of the teacher education budget to schools. The consequence is that preservice teachers now spend two thirds of their time in schools and have less time at university (Furlong, 2002). In an attempt to define professionalism in England, the Teacher Training Agency (TTA) funds and manages all courses for teacher education in England and determines the financial allocation to schools. In a 10-year study of change in teacher education in the UK, the content of teacher education courses at university has become more prescribed, and the relationship to experience in schools less connected (Furlong, Barton, Miles, Whiting, & Whitty, 2000).

Clearly, there is widespread dissatisfaction with the quality of teacher education in many countries. But what is wrong with the conventional model of teacher education that is stimulating calls for reform? Indeed, is there a better way?

This paper is organised in three sections to discuss these two questions. First, the relationship between conceptions of teaching and views about learning to teach is examined. This is important. Second, I identify the problems that exist in a conventional teacher education model and third, I propose a way of thinking based on four interrelated dimensions that will lead to a more connected way of designing teacher education programs: (i) conceptual links across the university-based curriculum; (ii) theory-practice links between university and schools; (iii) social-cultural links between participants in the program; and (iv) personal links in establishing the identity of a teacher educator.

1. Conceptions of Teaching and Learning to Teach

There should be a relationship between how teaching is perceived and the design used to learn about teaching. According to Carter (1990), "how one frames the learning-to-teach question depends a great deal on how one conceives of what is to be learned and how that learning takes place" (p. 307). Fenstermacher (2002) highlights two different views on the nature of teaching and how this corresponds to views on learning about them:

Policy advocates who presuppose that teaching is a relatively simple enterprise are often those whose conception of "education space" is simple, and thus the teaching that navigates this space need not be highly specialized. Those who presuppose that teaching is relatively complex are typically those who perceive education space as tremendously complex and hence see a need for training and specialized competence to navigate it successfully.

(p. 21)

Let us examine these two different views about the nature of teaching and consider implications for the design of teacher education programs.

A simplistic view of teaching

Research by Wise, Darling-Hammond, McLaughlin, & Bernstein (1984) in 32 US cities concluded that teachers and administrators usually hold one of four conceptions of teaching — as a craft, labour, profession or art. These four conceptions are ideal forms, but nonetheless do indicate different approaches to teaching. When conceived as a *craft*, teaching is believed to be a repertoire of skills or competencies that are accrued over time. Knowledge about these techniques also means having generalised rules for when and how to apply them as 'this view of teaching assumes that general rules for applying specific techniques can be developed and that proper use of the rules combined with knowledge of the techniques will produce the desired outcomes' (Wise et al., 1984, p. 7). Similarly, when conceived as a *labour*, teaching is a set of goals, lesson plans and skills that others have designed and the role of the teacher is to implement these. Both of these conceptions represent a simplistic approach that atomizes teaching into technical skills to be 'mastered' over time.

This type of mechanistic or reductionist thinking is evident in how the curricula of conventional teacher preparation courses are designed for preservice students. Many teacher training programs focus independently on pedagogy, sociology, learning, assessment, classroom management, technology, evaluation and discipline knowledge. Such an arrangement of courses is based on a mechanistic view of learning to teach — it is a process of providing student teachers with independent knowledge bases about teaching. This compartmentalized structure, which exists in many teacher education programs, is consistent with a positivist view of knowledge that permeates many university courses. Schön (1983, 1987) called this approach of dividing discipline knowledge into sections and then presenting it to students in courses one by one as *technical rationality* such that "professional activity consists in instrumental problem solving made rigorous by the application of scientific theory and technique" (p. 21). This view of knowledge assumes that learning is an "additive process" (Day, 1999) that largely ignores the experiences and knowledge of individuals as well as the context of the action setting. As such, a

simplistic view of teaching corresponds with a view of learning to teach as a process of knowledge-acquisition which is consistent with a positivistic view of knowledge as inert subject-matter that can be "transmitted" to students. According to Feiman-Nemser and Buchmann (1989):

The typical programs of teacher preparation treat learning to teach as an additive process that largely bypasses person and setting. None of these models illuminates the role of prior beliefs or preconceptions in teacher learning. Not do they take into account the influence of program features, settings, and people as they interact over time. (p. 368)

Wideen et al (1998) notes that this structure represents a "transmission model" of teacher education and this view on learning to teach is well represented in the phrase "teacher training". As such, the design of teacher education programs is based on a training model with the purpose of passing on necessary skills and knowledge, "The university provides the theory, methods, and skills; the schools provide the setting in which that knowledge is practiced; and the beginning teacher provides the individual effort to apply the knowledge" (p. 167). A different conception of teaching, however, necessitates an alternative view on learning to teach.

A complex view of teaching

A conception of teaching as a *profession* or *art* implies that teaching is more than the development of a repertoire of techniques, but also includes personal judgements about when and how techniques should be applied. To make an informed judgement means having a theoretical basis for making decisions as well as awareness of the 'unpredictable, personalized nature of teaching' (Day, 1999, p. 94). Such a complex view of teaching acknowledges the dynamic context of each classroom and accepts that there is no such thing as fail-proof teaching strategies. This means that teaching is more than the delivery of prescribed knowledge using a repertoire of strategies, but is 'a dynamic relationship that changes with different students and contexts' (Hoban, 2000, p. 165). In this respect, what a teacher does in a classroom is influenced by a combination of elements such as the curriculum, the context, and how students respond to instruction at any particular time.

This view of the complex nature of teaching necessitates 'holistic judgement' (Day, 1999) about what, when and how to teach in relation to a particular class. Having a conception of teaching as an art or profession means that teachers need to develop a repertoire of strategies as well as understanding that their application depends on making judgements about unique contexts and unpredictable classroom moments as, 'the teacher must draw upon not only a body of professional knowledge and skill, but also a set of personal resources that are uniquely defined and expressed by the personality of the teacher, and his or her individual and collective interactions with students' (Wise, Darling-Hammond, McLaughlin & Bernstein, 1984, p. 8). Further, aspects of classroom teaching are interrelated. In any one lesson, teachers are expected to deal with many influences—the curriculum content, the number of children, the range of children's interests and prior knowledge, the resources available, how the lesson connects with the other lessons before and after, different ways in which children learn, any special needs that children have, ways to assess the learning, strategies for introducing, implementing and concluding a lesson, strategies for behaviour management and consideration of the socio-cultural background of the children. These influences do not act independently — they interact and create a dynamic learning environment with many interrelated influences (Biggs, 1993). As such, teaching a class of children is, by nature, very complex and problematic.

In the context of university teaching, Biggs (1993) argued that every university class is a 'set of interacting ecosystems' (p. 74) made up of students, teachers, teaching contexts and curriculum. Changing one element, like a curriculum, means changing other aspects of the classroom such as teaching strategies and assessment. He claims that these factors are often in equilibrium or 'alignment' and have evolved over time so that there is a balance or order between the

curriculum, resources, and assessment requirements like a system. Even a conventional teacher has a pedagogical system based on an alignment between the transmission of facts, rote learning by students and individual knowledge-based assessment. Biggs (1993) concluded that these elements interact with each other in a type of equilibrium and called each university class an 'ecosystem of the educational swamp' (1993, p. 74). Where the balance exists in a teacher's instruction, be it in the transmission of knowledge or in the facilitation of student learning, depends on how teaching is conceived:

We have to adjust our teaching decisions to suit our subject matter, available resourcing, our students and our own individual strengths and weaknesses as a teacher. It depends on how we *conceive* the process of teaching, and through reflection come to some conclusion about how we may do our particular job better.
(Biggs, 1999, p. 2)

Taking into account a conception of teaching as a complex and problematic activity, how should student teachers learn to teach? According to Wideen et al. (1998), who reviewed 93 journal articles on learning to teach, the design of teacher education should not focus on the transmission of knowledge about teaching, but on the beliefs of student teachers as well as providing an infrastructure to support them in learning:

What emerged as a more productive approach in learning how to teach was the designing of programs that built upon the beliefs of the beginning teachers. In fact the most common recommendation made by researchers in the studies we reviewed was that having beginning teachers examine their prior beliefs was an essential first step in the process. From that point on, learning to teach became a process of negotiating a satisfying teaching role (Bullough, 1992) within a notion of good practice. At the core of this approach lies the epistemological stance that learning how to teach is a deeply personal activity in which the individual concerned has to deal with his or her prior beliefs in the light of expectations from a university, a school, and society, and in the context of teaching.
(p. 160-161)

It appears, therefore, that the design of a conventional teacher education program, which presents decontextualized, educational knowledge in a fragmented way, does not portray to students an understanding of the complexity of teaching. Instead, packaging educational knowledge into independent courses presents the curriculum as a jigsaw puzzle and leaves it to the students to integrate the content so that they construct their own big picture of education. In addition, there are other structural features that also promote a fragmented approach to teacher education.

2. The Problems of Conventional Teacher Education Programs

Not only does the design of conventional teacher education programs not complement the complexity of teaching, but there are other concerns as well. Tom (1997) identified 10 issues that are problematic in many teacher education programs: (i) unclear goals of programs; (ii) fragmented courses which lack relevance and coherence; (iii) incoherence between courses from different faculties; (iv) discontinuities between university courses and school practice; (v) low status of teacher educators even within a faculty of education; (vi) independent department structures in faculties of education that promote a lack of collaboration; (vii) unclear career path of teachers and their role in practicum supervision; (viii) numerous stakeholders involved in teacher education; (ix) lack of planning for change strategies; and (x) vulnerability of teacher education to one-off reforms. Perhaps another one could be added — lack of communication between universities and schools in regard to mentoring of student teachers on practicum.

It is, therefore, a paradox to try to address the multi-faceted problems of teacher education with a one-off solution. What permeates the design of conventional teacher education programs is *fragmentation* in terms of the content of courses (as identified in problems i-iii), the relationship

between theory and practice (as identified in iv) and social-cultural influences (v-x). Because of this number of problems, Tom (1997) emphasized that productive change in teacher education required a multi-faceted response to address these problems together, rather than one-off changes:

Change in teacher education programming will continue to be superficial and tenuous until the multiple sources of the "problem" of teacher education are recognized and explicitly addressed. . . . unless one concurrently considers the normative, structural, personnel, institutional, career, governances and strategic issues, any effort to reform teachers education will be incomplete and therefore deeply at risk.

(p. 3-8)

Importantly, these problems should not be addressed by focusing on a collection of independent solutions, but by focusing on multiple *relationships* in the design of a teacher education program.

3. Learning about Teaching: A Four Dimensional Approach to Designing Teacher Education Programs

An acceptance of the complex nature of teaching necessitates a more comprehensive approach to the design of programs for learning to teach. If it is assumed that teaching is a complex profession and that schools are diverse cultural and social places, then a simplistic "application of knowledge" approach is inadequate. In a review of 93 studies about learning to teach, (Wideen et al., 1998) concluded:

the focus on the knowledge base of teaching during teacher preparation, as something to be applied during the first year, has limited value for beginning teachers. . . . teacher education reform will continue to be frustrated until there is a fundamental change in the cultures and contexts of schooling that beginning teachers have to encounter. This change would create situations where greater congruity exists between teacher preparation and the schools where beginning teachers begin their teaching careers.

(p. 159)

Assuming that teaching is a complex profession, we need an approach to designing teacher education programs that "educates" preservice teachers in the complexity of teaching whilst taking into account the social-cultural context of university and the schools. This does not mean that there is a "one-size-fits-all" best model of teacher education — this does not exist. In fact, there are many different kinds of teacher education models that evolve in light of contextual influences such as the resources, types of students, schools and needs. But using key relationships or dimensions as a guide for teacher education design will help teacher educators to determine the type of teacher education model that will most likely produce the types of teachers that they desire.

Scannell (2002), reviewed six 'effective' teacher education programs and found there were certain characteristics that they had in common:

1. A concept of good teaching is apparent in courses and field experiences. The concept is consistent across courses and student experiences; it has a cohesive presence in the program.
2. Theory is taught in the context of practice. Theory includes growth and development, learning theory, and pedagogical content knowledge.
3. Extended field experiences are articulated and sequenced with theory. "Extended" refers to at least 30 weeks; the field experiences are designed to enhance what is studied in college classes and to provide candidates with the opportunity to apply and/or to see theory in action.
4. A well-defined, accepted standard of practice is used to guide coursework and clinical experiences and to evaluate them.

5. School/university partnerships are based on shared beliefs. The cooperating classroom teachers have the disposition and ability to extend and build on what the programs have presented to candidates.
 6. Assessment and comprehensive and bonded to instruction, and results of assessment are used to ensure that candidates' learning is applied to real situations. Assessment data are collected from case studies, performance evaluation and the use of portfolios.
- (p. 9)

A feature that is evident in these six characteristics is the relationships or links between components of a teacher education design so that students experience a coherent approach in which links are made more explicit for student teachers. This approach contrasts with a conventional teacher education design that considers the components first and does not focus on the relationships leaving student teachers to make their own connections.

When most innovative teacher education programs are examined, however, the common feature is the connectedness or links between the components or elements. There are three relationships that are evident in most innovative teacher education designs — conceptual links between the content or knowledge areas, theory-practice links between the setting such as school and university and/or social links between the stakeholders. These three sets of links are like three dimensions of teacher education design because they overlap and are interrelated. In addition, it is important to include another link or dimension — a personal dimension which focuses on how teacher educators form their identity. This latter dimension is important as it will influence how teacher educators view the other three dimensions. Although programs will evolve in different ways because of unique contexts, resources, and the stakeholders involved, keeping these four dimensions in mind will help reduce the fragmentation and promote coherency across a program.

Dimension 1: Conceptual links across the university-based curriculum

The conventional design of teacher education programs has been called an "assembly-line" model (Tom, 1997), an "application-of-theory model" (Korthagen & Russell, 1995), and a "positivist model" (Britzman, 1991). This mechanistic design focuses on the "parts" of the profession, such as different knowledge bases, in isolation to the other elements such as relevance to schools. According to Ben-Peretz (1995), "The hidden curriculum of teacher education tends to communicate a fragmented view of knowledge, both in coursework and in field experiences. Moreover, knowledge is 'given' and unproblematic. These views of knowledge are likely to become quite problematic as teachers gain experiences" (p. 546). It is similar to teaching children to swim by getting them to learn different parts of a swimming stroke one by one — learn the arm movement, then how to kick, how to breath, how to float and how to keep your head down. Then throw the child in the deep end and see what happens... a sure-fire recipe for drowning! The traditional design of teacher education is similar — teach preservice students the components of teaching in isolation to each other and then throw the person in the deep end of a real classroom on practicum!

Tom (1997) nominated four criticisms of teacher education courses. These include descriptors such as: (i) *vapid* meaning that they lack "life" and are considered by many student teachers to be vague, superficial and less rigorous than most non-education subjects; (ii) *impractical* meaning that many teacher educators lack recent school experience and hence relevance in their courses; (iii) *segmented* such that courses have little relevance to each other; and (iv) *directionless* such that course operate in isolation and do not focus on a common set of goals or purposes. Kagan (1990) suggests that a teacher education course is so "multidirectional" that it is not unusual for student teachers to get "lost on the way". Teacher education courses would make more sense to students if there was more integration between the different knowledge bases, courses were dove-tailed into some coherent goals or purposes or even fully integrated into

inquiry modules. In short, what are the conceptual links between the courses and how are these links made explicit to students?

Dimension 2: Theory-practice links between schools and university

There have been many views on the relationship of theory presented at university to the application of this theory in schools. In contrast with the conventional structure of university courses first followed by practicum experiences, Russell and Bullock (1999) maintain that the reverse order provides student teachers with a context for theory presented in courses. Korthagen and Kessels (1999) stated that the argument about which should come first, the theory or the practice, is not the most important issue in teacher education. Instead, they contend that the important question centers on how and when theory is introduced to teachers. They draw on the ideas of Plato and use his concepts of *phronesis* (perceptual knowledge that is subjective and situation specific) and *episteme* (conceptual knowledge or theory applied to a wide variety of situations). They contend that a method called "the realistic approach" is beneficial for the learning of preservice students because it moves from practice to theory. As such students first need to become aware of concerns/issues/problems (their *phronesis*) from their experiences and then the role of teacher educators is to introduce relevant epistemic knowledge. However, the influence of student-teachers participating in practicum in schools can also have a strong socialization effect in terms of how they teach, (Zeichner & Gore, 1989). In short, how are the links between educational theory and school based practice made explicit for students?

Dimension 3: Social-cultural links between participants in the program

It has been well documented that school and universities develop different cultures and ways of viewing teaching (Goodlad, 1993; Goodson, 2001; Sarason, 1996). In fact, academics are well known for not collaborating across a faculty because they have vested research interests which is promoted by the department structures of faculties (Tom, 1997). No only does this often inhibit the development of a coherent vision in teacher education, but sometimes there are also different views on the role of faculty in practicum supervision. Often, university staff promote the "theoretical" aspects of teaching whereas classroom teachers focus on the "pragmatic" aspects of practice. A consequence is that student teachers are caught between these different ways of thinking about their involvement in schools (Clarke, 1996). For student teachers to gain a better learning experience in their university-based and school-based programs, a more collaborative approach is needed between university instructors, teachers in schools and the student-teachers. In short, what efforts are made to encourage social interaction between academics and teachers to break down their cultural barriers so that they have more of a shared vision about teacher education in their relevant settings?

Dimension 4: Personal links in establishing the identity of a teacher educator

Attitude towards teaching and the type of people who are involved in teacher education is fundamental to the quality of a program that is in place. Essentially, what identity do they perceive as teacher educators? — do they understand the complexity of teaching and "practice what they preach" or do they perceive themselves as specialist teachers of discipline knowledge? According to Bullough (1997), "what beginning teachers believe about teaching and learning and self-as-teacher — is of vital concern to teacher education; it is the basis for meaning making and decision making" (p. 21). This is no less important for teacher educators themselves as their own views about teaching are the basis for their attitudes and meaning making for all aspects of their program. Sachs (2003) refers to five dimensions of identity as noted by Wenger (1998): (i) identity as negotiated experience; (ii) identity as community membership; (iii) identity as learning trajectory; (iv) identity as nexus of multi membership; and (v) identity as a relation between the local and the global.

Bullough and Gitlin (2001) have identified several ways in which teachers can explore their identity and these methods also apply to teacher educators. Some of these ways include writing about personal history in regard to teaching, developing metaphors for teaching and self-study

on teacher education practices. Importantly, teacher educators should constantly examine their identity as a way of modeling reflective practices to their preservice teachers. The consequence is that their own conceptions of teaching will influence how they view and participate in the other three dimensions that influence teacher education design.

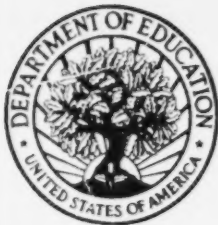
Conclusion

The purpose of this article is not to highlight a "best model" of teacher education — it does not exist because there are too many contextual factors that come into play to identify one best model. Instead, the purpose of this article is to explain why the conventional model of teacher education is flawed and to provide an alternative way of thinking so that the design of a program may better align with the complexity of the profession. I believe that more effective teacher education models will evolve if we shift our way of thinking from emphasizing the components to emphasizing the relationships between the key elements. This shifts the emphasis of design from the independent components, such as the courses, practicum or the people, to the relationships between them. Relating the elements of a teacher education program will promote more dynamic interaction and complement the complexity of the nature of teaching. It should be emphasized that none of these four dimensions of teacher education design — identity links, conceptual links, theory-practice links and social links — are mutually exclusive. All teacher education designs will have these four dimensions present, but to different extents according to the degree of connectedness. However, when these dimensions are all considered as lenses to guide the design of teacher education programs, it is likely that student learning will be more cumulative rather than fragmented, and hence improve the quality of teacher education.

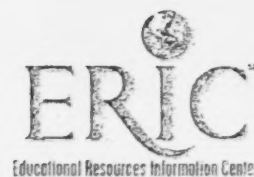
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